

CLAIMS

What is claimed is:

1. A process for improving operations of clinics and other medical facilities to enhance care and treatment of patients requiring blood purification, comprising the steps of:

treating patients requiring blood purification at least one facility, said treating comprising providing each patient with an extracorporeal blood treatment (Rx), said extracorporeal blood treatment comprising removing blood from the patient, treating the blood externally to the patient by removing matter from the blood and returning the treated blood to the patient;

said extracorporeal blood treatment being selected from the group consisting of hemodialysis, dialysis, ultrafiltration, hemofiltration, hemodiafiltration, plasmapheresis, and apheresis;

measuring the effectiveness of each treatment per patient;

measuring the efficiency of each treatment per patient by determining the time for each treatment of each patient;

determining the frequency of said treatments for each patient;

determining costs of each of said treatments per patient;

calculating total costs of said treatments for each patient;

calculating variations of effectiveness of said treatments for each patient;

calculating variations of efficiency of said treatments for each patient;

calculating variations of costs of said treatments for each patient;

identifying patient characteristics for each patient by measuring the weight and height of each patient and determining the sex and age of each patient;

identifying demographics of each facility including the geographical location of each facility;

comparing and correlating data comprising said measured effectiveness and efficiency of said treatments per patient, said frequency of treatment per patient, said costs of said treatment per patient, said variations in effectiveness, efficiency and costs of said treatments per patient, said patient characteristics, and said demographics of each facility; and

statistically analyzing said data to compute a sigma comprising a standard deviation around a mean of said data to determine the performance of said process.

2. A process as in claim 1 wherein:

said facility is selected from the group consisting of a medical treatment facility and a home of a patient; and

said medical treatment facility is selected from the group consisting of a clinic, a hospital, a center for medical treatment, a patient treatment facility of a health care provider, and an office of a physician.

3. A process as in claim 1 wherein the effectiveness of each treatment is measured according to the mathematical model KT/V wherein K = clearance, T = time of said treatment, and V = body distribution volume of urea or creatine.

4. A process as in claim 3 wherein said statistically analyzing further comprises calculating a standard deviation for said effectiveness of said treatment by statistical computation, selected from the group consisting of: calculating a standard deviation for KT/V for each patient, calculating a standard deviation for inter patient KT/V , and calculating a standard deviation for intra patient KT/V .

5. A process as in claim 1 wherein:
said calculating are computed electronically by a central processing unit (CPU);

said comparing are performed electronically by said CPU;

said statistically analyzing are computed electronically by said CPU; and

said CPU is selected from the group consisting of a: microprocessor, computer, main frame computer, server computer, desktop computer, workstation computer, notebook computer, laptop computer, notebook computer, palm pilot-type computer, computer chip, integrated circuit, electronic controller, network, internet, and global communications network.

6. A process as in claim 5 including:
electronically calculating financial results of said process for said treatment of said patients at said facilities with said CPU;

said financial results are selected from the group consisting of: earnings, operating income, gross income, net income, gross margin, net margin, profits, EBITA and EBITDA;

said EBITA comprising earnings before interest, taxes and amortization; and

said EBITDA comprising earnings before interest, taxes, depreciation and amortization.

7. A process as in claim 1 wherein:

said data further comprises supplemental data selected from the group consisting of facility data, patient data, and cost data;

said facility data comprising demographic information selected from the group consisting of: metropolitan statistical area of each facility defining an urban MSA, ownership of each facility, type of ownership of each facility including company owned and joint venture facilities, length of service of each facility, hospitalization of patients, division, and employee turnover (T/O) at each facility;

said patient data comprising patient information determined from each patient, selected from the group consisting of: type of treatment per patient, duration (months) of treatments per patient, percentage of patients having said treatment as a primary cure for their ailments, race of patients, ethnic background of each patient, hemoglobin per patient, albumen per patient, catheter usage per patient, equipment usage per patient, temperature conditions during treatment, humidity conditions during treatment, type of equipment and supplies, composition of dialysis fluids, noncompliance per patient, iron supplement usage per patient, epogen usage per patient, crude mortality rate (CMR) of patients in said facility, average months on dialysis (MOD) per patient, modified charleson comorbidity index (MCCI); and

said cost data comprising financial data selected from the group consisting of: equipment costs per treatment, dialyzer costs per treatment, costs of supplies per treatment, costs for sterilizing dialysis equipment for said treatments, savings and costs for reuse of equipment for said treatment, labor costs per treatment, overhead per facility, percentage of patients covered by commercial insurance, reimbursement of medicare for said treatments, reimbursements from government agencies for said treatments, and reimbursement from insurance companies for said treatments.

8. A process as in claim 1 including mapping of said process.

9. A process as in claim 1 including operating said process at about one sigma.

10. A process as in claim 1 wherein said treatment comprises:

preparing the patient for said treatment;
preparing a dialysis fluid for the patient;

injecting an injector into said patient, said injector selected from the group consisting of a needle and a catheter;

removing blood from the patient through the needle or catheter via tubing connected to a monitor, said monitor comprising a dialysis machine with a dialyzer cartridge having a filter;

passing the removed blood through a semipermeable membrane;

circulating the dialyzer fluid from said monitor through said semipermeable membrane; and

returning the treated blood which has passed through said semipermeable membrane to said patient via said needle or catheter and said tubing;

monitoring the treatment with said monitor;

cleaning the monitor after treatment by disinfecting, sterilizing or sanitizing the monitor with heat or a chemical disinfectant;

discarding the tubing after treatment; and

processing the cartridge after treatment by a method selected from the group consisting of discarding the cartridge after treatment and cleaning the cartridge after treatment for reuse.

11. A process for improving operations of clinics and other medical facilities to enhance care and treatment of patients, comprising the steps of:

treating patients with a treatment (Rx) at a medical treatment facility selected from the group consisting of a clinic, a hospital, a center for medical treatment, a patient treatment facility of a health care provider, and an office of a physician;

selecting a set of factors comprising criteria and variables effecting performance of said treatment of said patients in said facility;

said factors being selected from the group consisting of: effectiveness of each treatment per patient, efficiency of each treatment per patient, frequency of said treatments for each patient, costs of each of said treatments per patient, total costs of said treatments for each, variations of effectiveness of said treatments for each patient, variations of efficiency of said treatments for each patient, variations of costs of said treatments for each patient, demographics of each facility including the geographical location of each facility,

metropolitan statistical area of each facility defining an urban MSA, ownership of each facility, type of ownership of each facility including company owned and joint venture facilities, length of service of each facility, hospitalization of patients, division, employee turnover (T/O) at each facility, type of treatment per patient, duration (months) of treatments per patient, percentage of patients having said treatment as a primary cure for their ailments, race of patients, ethnic background of patients, hemoglobin per patient, albumen per patient, catheter usage per patient, equipment usage per patient, noncompliance per patient, iron supplement usage per patient, epogen usage per patient, crude mortality rate (CMR) of patients in the facility, average months on dialysis (MOD) per patient, temperature conditions during treatment, humidity conditions during treatment, type of equipment and supplies, composition of dialysis fluids, modified charleson comorbidity index (MCCI), costs of equipment and supplies per treatment, dialyzer costs per treatment, costs for sterilizing dialysis equipment for said treatments, savings and costs for reuse of equipment for said treatment, labor costs per treatment, overhead per facility, percentage of patients covered by commercial insurance, reimbursement of medicare for said treatments, reimbursements from a government agency for said treatment, and reimbursement from insurance companies for said treatments;

inputting data comprising said set of factors into a central processing unit (CPU) selected from the group consisting of a: microprocessor, computer, main frame computer, server computer, desktop computer, workstation computer, laptop computer, notebook computer, palm pilot-type computer, computer chip, integrated circuit, electronic controller, network, internet, and global communications network; and

statistically analyzing, comparing and correlating said data with said CPU to compute a sigma comprising a standard deviation around a mean of said data to determine the performance of said process.

12. A process as in claim 11 including:

electronically calculating financial results of said process for said treatment of said patients at said facilities with said CPU;

said financial results are selected from the group consisting of: earnings, operating income, gross income, net income, gross margin, net margin, profits, EBITA and EBITDA;

said EBITA comprising earnings before interest, taxes and amortization; and

said EBITDA comprising earnings before interest, taxes, depreciation and amortization.

13. A process for improving operations of clinics and other medical facilities to enhance care and treatment of patients, comprising the steps of:

treating patients in at least one facility with a treatment (Rx);

said facility comprising a medical treatment selected from the group consisting of a clinic, a hospital, a center for medical treatment, a patient treatment facility of a health care provider, and an office of a physician;

measuring the effectiveness of each treatment per patient;

measuring the efficiency of each treatment per patient by determining the time for each treatment of each patient;

determining the frequency of said treatments for each patient;

determining costs of each of said treatments per patient;

calculating total costs of said treatments for each patients;

calculating variations of effectiveness of said treatments for each patient;

calculating variations of efficiency of said treatments for each patient;

calculating variations of costs of said treatments for each patient;

identifying demographics of each facility including the geographical location of each facility;

inputting data into a central processing unit (CPU);

said data comprising said measured effectiveness and efficiency of said treatments per patient, said frequency of treatment per patient, said costs of said treatment per patient, said variations in effectiveness, efficiency and costs of said treatment per patient, said patient characteristics, and said demographics of each facility;

said CPU being selected from the group consisting of a: microprocessor, computer, main frame computer, server computer, desktop computer, workstation computer, laptop computer, notebook computer, palm pilot-type computer, computer chip, integrated circuit, electronic controller, network, internet, and global communications network;

storing said data in said CPU;

retrieving data from said CPU; and

statistically analyzing said data with said CPU to compute a sigma comprising a standard deviation around a mean of said data and correlating said data to determine the performance of said process.

14. A process as in claim 13 wherein:

said data further comprises supplemental data selected from the group consisting of facility data, patient data, and cost data;

said facility data comprising demographic information selected from the group consisting of: metropolitan statistical area of each facility defining an urban MSA, ownership of each facility, type of ownership of each facility including company owned and joint venture facilities, length of service of each facility, hospitalization of patients, division, and employee turnover (T/O) at each facility;

said patient data comprising patient information determined from each patient, selected from the group consisting of: type of treatment per patient, duration (months) of treatments per patient, percentage of patients having said treatment as a primary cure for their ailments, race of patients, ethnic background of each patients, hemoglobin per patient, albumen per patient, catheter usage per patient, equipment usage per patient, temperature conditions during treatment, humidity conditions during treatment, type of equipment and supplies, composition of dialysis fluids, noncompliance per patient, iron supplement usage per patient, epogen usage per patient, crude mortality rate (CMR) of patients in said facility, average months on dialysis (MOD) per patient, modified charleson comorbidity index (MCCI); and

said cost data comprising financial data selected from the group consisting of: equipment costs per treatment, dialyzer costs per treatment, costs of supplies per treatment, costs for sterilizing dialysis equipment for said treatments, savings and costs for reuse of equipment for said treatment, labor costs per treatment, overhead per facility, percentage of patients covered by commercial insurance, reimbursement of medicare for said treatments, reimbursements from government agencies for said treatments, and reimbursement from insurance companies for said treatments.

15. A process as in claim 13 including:

electronically calculating financial results of said process for said treatment of said patients at said facilities with said CPU;

said financial results are selected from the group consisting of: earnings, operating income, gross income, net income, gross margin, net margin, profits, EBITA and EBITDA;

said EBITA comprising earnings before interest, taxes and amortization; and

said EBITDA comprising earnings before interest, taxes, depreciation and amortization.

16. A process as in claim 13 including operating said process at about one sigma.

17. A process as in claim 13 wherein:

said treatment comprises removing blood from the patient, treating the blood externally to the patient by removing matter from the blood and returning the treated blood to the patient; and

said treatment is an extracorporeal blood treatment selected from the group consisting of hemodialysis, dialysis, ultrafiltration, hemofiltration, hemodiafiltration, plasmapheresis, and apheresis.

18. A process as in claim 17 wherein:

the effectiveness of each treatment is measured according to the mathematical model KT/V wherein K = clearance, T = time of said treatment, and V = body distribution volume of urea or creatine; and

said statistically analyzing further comprises calculating a standard deviation for said effectiveness of said treatment by statistical computation, selected from the group consisting of: calculating a standard deviation for KT/V for each patient, calculating a standard deviation for inter patient KT/V , and calculating a standard deviation for intra patient KT/V .

19. A process as in claim 18 wherein said treatment is selected from the group consisting of hemodialysis and dialysis.

20. A process as in claim 19 wherein said treatment comprises:

preparing the patient for said treatment;

injecting an injector into said patient, said injector selected from the group consisting of a needle and a catheter;

removing blood from the patient through the needle or catheter via tubing connected to a monitor, said monitor comprising a dialysis machine with a dialyzer cartridge having a filter;

passing the removed blood through a semipermeable membrane; and

returning the treated blood which has passed through said semipermeable membrane to said patient via said needle or catheter and said tubing;

monitoring the treatment with said monitor;

cleaning the monitor after treatment by disinfecting, sterilizing or sanitizing the monitor with heat or a chemical disinfectant;

discarding the tubing after treatment; and

processing the cartridge after treatment by a method selected from the group consisting of discarding the cartridge after treatment and cleaning the cartridge after treatment for reuse.